Schedule B
to the Response the Office Action of June 26, 2007

Please amend the pre-existing paragraphs of the specification to read as follows:

[0011] US Patent Pub. ~~2001/0094882 A1~~ **20020094892** by ~~Clauzin~~ **Chauvin published July 18, 2002** discloses a two member bat consisting of an outer shell and an insert laminate partially bonded to the shell.

[0011A] US Patent Publication No. 2004/0209716 by Vacek published October 21, 2004 describes a polymer composite bat having a polymer composite frame and a polymer composite insert along with various manners of incorporating polymer composites and to such a bat.

[0011B] Fritzke US Patent Publication No. 2004/0157689 to Fritzke published August 12, 2004 discloses an all-metal bat having a frame and insert wherein the central portion of the barrel is strengthened by the presence of a polymer composite layer formed on the surface of the insert.

[0016] Therefore, in view of the foregoing, what is needed is tubular baseball bats with a specific distribution of variable stiffness along their barrel portions. A main object of the present invention is to provide tubular baseball bats, and particularly existing bats, with changed (usually decreased) bat performance, without significantly increased weight, in order to meet new or changed performance standards. To achieve this, the bats of the present invention are stiffened in the barrel area of peak bat performance commonly referred to as the sweetspot. Typically, this is an area approximately 2" to 4" in width as compared to barrel portion lengths of 4" to 16". One basic feature of the invention is to increase the radial stiffness of the barrel wall in the mid-section region of the barrel portion of the bat over the radial stiffness in the two adjacent regions. This may be done in a variety of manners. These include:

- by forming the barrel wall of inherently stiffer material within the mid-section,
- by making the barrel wall thicker within the mid-section, or
- by providing a stiffener within the mid-section of the barrel, either on the inside or on the outside barrel wall surface. This **[[is]] can be** achieved in one variant by inserting or adding to the bat a circumferential stiffener in the region of the sweetspot. **The result is that the barrel wall is radially stiffer in the mid-section of the barrel portion and less stiff radially in the two lateral regions commencing immediately adjacent to and extending respectively on each side of the mid-section towards the distal and proximal ends of the bat respectively.**

[0019] A third object of the present invention is to provide existing tubular bats with a specific predetermined bat maximum bat performance with a larger sweetspot than tubular bats of the prior art. In the present invention this is accomplished by precisely stiffening only the peak performance area (generally the sweetspot area) of the existing bat to the performance level of the barrel portion areas immediately adjacent on both sides of the sweetspot of the unstiffened bat. The resultant effect is to **provide a relatively flattened batting performance level along/over such mid-section compared to the batting performance level along the immediately adjacent portions of the lateral regions on the respective sides of the mid-section and can** approximately double the sweetspot size (that is, the area of the barrel portion which provides maximum bat performance). **This effect is particularly achieved when the radial stiffness of the barrel wall in the mid-section provides the bat with a batting performance level that is reduced to substantially the batting performance level of the portions of the lateral regions immediately adjacent to each side of the mid-section.**

[0036D] Fig. 6.2 shows a longitudinal cross-section of the third embodiment of the present invention showing an alternative double wall polymer composite bat in accordance with the present invention showing a localized area of the fibre type, **layout density** and/or fibre angle change within the insert resulting in increased radial stiffness generally confined to the sweetspot area of the barrel portion.

[0036F] Fig. 6.2B shows a cross-sectional area within the sweetspot area showing a stiffened area of changed **layout density**, fibre angles and/or type.

[0036G] Fig. 6.3 shows a longitudinal cross-section of the third embodiment of the present invention showing the alternative double wall polymer composite bat in accordance with the present invention with an alternative construction showing a thickened barrel wall 21 **extending inwardly** within the insert resulting in increased radial stiffness generally ~~confirmed~~ **confined** to the sweetspot areas of the barrel portion.

[0053] Other materials commonly used in bat constructions such as aluminum, wood and plastics are not anistropic and are thus limited in controlling bat performance; for example, radial stiffness is equal to longitudinal stiffness and cannot be graduated along the barrel length 1. However, with composite materials, which are preferred, properties of bats made in accordance with the present

invention, such as radial stiffness which determines bat performance can be controlled (i.e. designed to a given requirement) by altering such parameters as the fiber alignments along the bat length 1, and/or the type of fibers chosen, their dernier (e.g. fiber stiffness) or fiber layout density (i.e. higher percentage of fibers) and/or the thickness of the polymer composite structure. Such thickened polymer composite material is integrally formed with the barrel wall portion whereby the thickened portion is formed of the same polymeric material as the underlying barrel wall portion **with which it is associated.** ~~**without there being present a boundary**~~.

This following claim [0062] is in the form as last presented for amendment in the prior office action of October 6, 2006. The applicant wishes to ensure that the claim is amended into this form

[0062] The thin polymer composite stiffener 18 of the present invention has a stiffener wall which is typically in the order of .005 inches to .040 inches in thickness, with a length of 2 inches to 6 inches which is typically less than 50% of the barrel length, such as 16 2/3 % of the barrel length, as is apparent from Figure 10. A 4 inch stiffener, as referenced in paragraph [0059], in a 12 inch barrel as referenced in Figure 10, would represent 33.3% of the barrel length; a 4 inch stiffener in a 16 inch barrel would represent 25%, and a 2 inch stiffener in a 16 inch barrel would represent 12.5% of the barrel length. The stiffener 18 is preferably bonded, fully or partially, to the main member 16, or to the secondary member insert 13 of Fig. 7 or to the secondary member sleeve 14 of Fig. 8, or combinations thereof on either the internal or external barrel walls, as shown in Figures 4, 5, 7 and 8. Analogous to Figures 4, 5, 7 and 8 an alternative solution (since stiffness is proportional to thickness) to the stiffener 18 is to vary the barrel thickness 6 to the same extent and manner along the barrel length 1 of any bat according to the invention, including the bat of Figure 6, in order to vary bat performance. The barrel portion's effective wall thickness in the mid-section can be greater by 5% **or 8 1/3%** or more over the thickness of the barrel in the lateral, adjacent portions. Conversely, the barrel wall's thickness beyond its central portion, in the lateral regions proceeding towards the end portions of the barrel, may be at least 5% **or 8 1/3%** thinner than the thickness of the barrel wall in the mid-section. **Just as the stiffener wall may be typically in the order of .005 inches to .040 inches in thickness, or .010 inches to .040 inches in thickness, or .015 inches to .040 inches in thickness, or 0.015 inches to 0.030 inches, so too the analogous increase in barrel wall thickness along the mid-section may fall within the same ranges.**

[0064] A third embodiment of the present invention Fig. 6 is a single wall tubular polymer composite baseball bat which in accordance with the present invention has a localized area of fiber type of greater stiffness and/or angle change 20 resulting in increased radial stiffness generally in the sweetspot area 19 located in proximity to the middle area of the barrel length 1. This embodiment applies equally well to double-wall and multi-wall (more than two walls) tubular all polymer composite baseball bats and is ~~limited~~ **applicable** to newly designed polymer composite single wall, double-wall, and multi-walled new bats as opposed to field returned bats. The fiber types, and/or fiber angles, and/or fiber sizes, layout density and/or composite thickness can be designed as otherwise described such as to graduate the radial stiffness of the barrel wall within the barrel portion 1 along its entire length. That is, the radial stiffness could be highest in the peak performance area (generally the sweetspot area 19) and gradually changing in uniform increments proceeding towards the barrel ends.